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EXAMINER

TRUONG, THOMAS

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte JEAN FRANCOIS BRUDNY,
BERTRAND CASSORET, REGIS LEMAITRE,
and JEAN-NOEL VINCENT

Appeal 2015-007467
Application 12/674,968
Technology Center 2800

Before TERRY J. OWENS, CHRISTOPHER L. OGDEN, and
MONTÉ T. SQUIRE, *Administrative Patent Judges*.

OWENS, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

The Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's rejection of claims 11, 15, 27–30, and 38. We have jurisdiction under 35 U.S.C. § 6(b).

The Invention

The Appellants claim a magnetic core. Claim 11 is illustrative:

11. A magnetic core comprising a stack of electrical steel sheets with a known preferential direction of permeability, wherein in the stack the preferential direction of permeability of successive single sheets and/or groups of sheets differs by a predetermined shift angle, wherein the stack of electrical steel sheets of the magnetic core is made of grain oriented

electrical steel sheets controlled to have directional magnetic properties, and wherein the shift angle is between 50° and 70° , wherein the shift angle is the same for each pair of successive single sheets or successive groups of sheets, and wherein the preferential direction of permeability of the electrical steel sheets is essentially parallel to a rolling direction of the respective steel sheet, wherein the preferential direction of permeability is the direction of maximum relative permeability, wherein the grain oriented electrical steel sheets have a magnetic flux density $B_{800A/m}$ greater than 1.85 Tesla when exposed to a magnetic field strength H of 800 Ampere per meter in a direction parallel to the rolling direction, and wherein the grain oriented electrical steel sheets have a magnetic flux density $B_{800A/m}$ less than 1.85 Tesla when exposed to a magnetic field strength H of 800 Ampere per meter in a direction perpendicular to the rolling direction.

The References

Irie	US 3,932,237	Jan. 13, 1976
Yamamoto (Yamamoto '061)	US 4,422,061	Dec. 20, 1983
Yamamoto (Yamamoto '277)	US 7,002,277 B2	Feb. 21, 2006
Ishihara	JP 59-092737 A	May 29, 1984

The Rejections

The claims stand rejected under 35 U.S.C. § 103 as follows:
claims 11, 15, 27, and 29 over Ishihara in view of Yamamoto '061,
claims 28 and 30 over Ishihara in view of Yamamoto '061 and
Yamamoto '277 and claim 38 over Ishihara in view of Yamamoto '061
and Irie.

OPINION

We affirm the rejections.

Although additional references are applied in the rejection of some of the claims, the Appellants argue the claims as a group (App. Br. 6–12). We

therefore limit our discussion to one claim, i.e., claim 11. Claims 15, 27–30, and 38 stand or fall with that claim. *See* 37 C.F.R. § 41.37(c)(1)(iv) (2012).

Ishihara discloses a rotating dynamoelectric machine stator core (1) comprising laminated ring-shaped thin iron plates (10) which are made from steel sheet, have directional magnetic properties and are sequentially shifted by 60° to provide the stator core (1) with uniform magnetic characteristic circumferential direction distribution without any negative influence on the properties of the rotating dynamoelectric machine (pp. 3–6; Figs. 1, 3). Ishihara’s steel sheets having directional magnetic properties are inexpensive relative to non-oriented steel sheets having nearly uniform magnetic properties in all directions (pp. 2–3).

Yamamoto ’061 discloses that in an 800 A/m magnetizing field the magnetic flux density of highly oriented silicon steel sheet is 1.88 Tesla or higher and the magnetic flux density of relatively low oriented silicon steel sheet generally is 1.86 Tesla or lower (col. 2, ll. 4–12).

The Appellants assert that “the ‘grain oriented electrical steel sheets’ of the presently claimed invention are well known to be far more expensive than non-oriented electrical sheets” (App. Br. 9).

That argument is not well taken because it is merely unsupported attorney argument, and arguments of counsel cannot take the place of evidence. *See In re De Blauwe*, 736 F.2d 699, 705 (Fed. Cir. 1984). Moreover, the assertion appears to be contrary to the Appellants’ disclosure that making the electrical steel sheet stack from grain oriented electrical steel sheets “has the technical effect of readily allowing the manufacture of electrical steel sheets having a preferential direction of permeability” (Spec. 6:1–6).

The Appellants assert that “the object of the invention of Ishihara was to reduce the cost of a stator core by using inexpensive steel having some directionality of magnetic properties” (App. Br. 9), i.e., “non-oriented steel having some degree of directionality but not enough directionality to be considered a grain oriented steel” (Reply Br. 3).

Ishihara does not use steel sheets having “some directionality” but, rather, uses steel sheets which have been rolled in a particular direction such that they have high directionality so that the shift angle between adjacent sheets is 60°, thereby providing the stator core with uniform magnetic characteristic direction distribution in the circumferential direction and no negative influence on the properties of the rotating dynamoelectric machine (pp. 3, 4; Fig. 3). The Appellants likewise disclose that “the preferential direction of permeability in the electrical steel sheets is essentially parallel to the rolling direction of the respective steel sheet” (Spec. 6:19–22) and that using the preferred 60° shift angle “for each pair of successive single sheets or successive group of sheets has the technical effect of providing a symmetric distribution of the magnetization and thus of local efficiency along the path of the magnetic flux” (Spec. 6:12–17, 29). Thus, like the Appellants, Ishihara appears to use grain oriented steel sheets. The Appellants indicate that such sheets have claim 11’s recited magnetic flux density characteristics (App. Br. 9).

The Appellants assert that the “inventors of the present application recognized that the shift in the preferential direction of permeability allows the flux to ‘jump’ from sheet to sheet according to the principle of least magnetic reluctance to achieve a higher magnetization along the flux path” (App. Br. 9) and that “this leads to less iron powder dissipation losses and

lower magnetizing current under the same supply voltage, which indirectly leads to less copper losses in the coil resistance” (App. Br. 10).

Because, as indicated above, Ishihara’s magnetic core appears to have the same structure as the Appellants’ magnetic core, it appears to likewise have those properties.

For the above reasons we are not persuaded of reversible error in the rejections.

DECISION/ORDER

The rejections under 35 U.S.C. § 103 of claims 11, 15, 27, and 29 over Ishihara in view of Yamamoto ’061, claims 28 and 30 over Ishihara in view of Yamamoto ’061 and Yamamoto ’277 and claim 38 over Ishihara in view of Yamamoto ’061 and Irie are affirmed.

It is ordered that the Examiner’s decision is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED